

Claims

The following is a copy of Applicant's claims that identifies language being added with underlining ("___") and language being deleted with strikethrough ("—"), as is applicable:

1. (Currently amended) An apparatus for propelling a user standing on the apparatus, comprising:

a platform to support the user;

wheels;

a steering support adapted to transfer a directional force from the platform to pivot at least one steered wheel relative to at least one other wheel; ~~and~~

a geartrain coupled to the platform, wheels, and steering support, the geartrain providing an upward return force to the platform; ~~and further~~ coupling at least one driven wheel to the platform so that downward motion of the platform causes rotation of the at least one driven wheel to propel the platform forward; and

a brake mounted to the geartrain.

2. (Original) The apparatus of Claim 1, wherein the wheels comprise a front set of wheels and a rear set of wheels, and the steering support mounts to a lower portion of the platform and to the geartrain.

3. (Original) The apparatus of Claim 1, wherein the geartrain comprises an overrunning clutch.

4. (Original) The apparatus of Claim 1, wherein the geartrain comprises a helical compression spring.

5-6. (Canceled)

7. (Currently amended) An apparatus for propelling a user, comprising:

a platform to support the user;

wheels;

a hinge joint adapted to transfer a downward force from the platform to a geartrain, pivot downward in response to a downward force from the platform, and pivot upward in response to a return force; ~~and~~

a geartrain coupled to the platform, wheels, and hinge joint, the geartrain coupling at least one driven wheel to the hinge joint so that a downward force from the platform rotates the geartrain causing rotation of the at least one driven wheel to propel the platform forward, and wherein the geartrain provides a return force to the hinge joint; and
a brake mounted to the geartrain.

8. (Original) The apparatus of Claim 7, wherein the geartrain comprises an overrunning clutch.

9. (Original) The apparatus of Claim 7, wherein the geartrain comprises a spring.

10-16. (Canceled)

17. (Currently amended) An apparatus for propelling a platform, comprising:

~~means for receiving a downward force on a first portion of the platform;~~

means for translating the a downward force from applied to a first portion of the platform to a rotational force on at least one wheel;

means associated with the means for translating for generating a return force ~~on the first portion of~~ to the platform;

~~means receiving a downward force on a second portion of the platform;~~

means for translating the a downward force from applied to a second portion of the platform to a rotational force on the wheel;

means associated with the means for translating for generating a return force on the second portion of the platform; and

~~means for receiving a directional force on the platform; and~~

means associated with the platform for translating the a directional force to the wheels applied to the platform to pivot a first set of wheels in a direction counter to a second set of wheels, wherein the platform moves in a lateral direction.

18-20. (Canceled)

21. (New) A skateboard, comprising:
a footboard having a front and a rear;
multiple wheels; and
a drive mechanism coupled to both the footboard and the wheels, the drive mechanism being configured to drive at least some of the wheels in response to alternate pivoting of the footboard toward the front and the rear of the footboard.
22. (New) The skateboard of Claim 21, wherein the footboard is a single piece.
23. (New) The skateboard of Claim 21, wherein the skateboard comprises an axle on which two wheels are mounted.
24. (New) The skateboard of Claim 23, wherein each of the two wheels comprises an overrunning clutch that enables the wheels on the axle to freely rotate when the rotational speed of the wheels exceed the rotational speed of the axle.
25. (New) The skateboard of Claim 23, wherein the drive mechanism comprises a transmission assembly associated with the axle.
26. (New) The skateboard of Claim 25, wherein the transmission assembly comprises a rack that connects to the footboard with a hinge joint, and gears that are driven by vertical displacement of the rack that results from the pivoting of the footboard.

27. (New) The skateboard of Claim 25, wherein the rack includes teeth that engage teeth provided on at least one gear such that vertical displacement of the rack causes rotation of the at least one gear.

28. (New) The skateboard of Claim 25, wherein the transmission assembly further comprises a compression spring that applies a return force to the footboard such that when the footboard is displaced downwardly relative to the transmission assembly the spring urges upwardly on the footboard.

29. (New) The skateboard of Claim 25, wherein the axle comprises a rear axle and the transmission assembly comprises a rear transmission assembly, the skateboard further comprising a front axle and a front transmission assembly that is associated with the front axle.

30. (New) A skateboard, comprising:

- a footboard having a front and a rear;
- multiple wheels;
- a drive mechanism coupled to both the footboard and the wheels, the drive mechanism being configured to drive at least two of the wheels; and
- a steering mechanism coupled to both the footboard and the drive mechanism, the steering mechanism being configured to pivot the drive mechanism in response to a lateral force applied to the footboard to enable steering of the skateboard.

31. (New) The skateboard of Claim 30, wherein the steering mechanism comprises:
- a steering support mounted to the footboard;
 - a hinge joint mounted to the footboard and pivotally connecting the drive mechanism to the footboard; and
 - a steering linkage that couples the drive mechanism to the steering support.
32. (New) The skateboard of Claim 31, wherein the steering support is a brace mounted to the footboard with a support linkage.
33. (New) The skateboard of Claim 31, wherein the steering support is hingedly connected to the footboard such that the steering support pivots in response to movement of the footboard during steering of the skateboard.
34. (New) The skateboard of Claim 31, wherein the steering linkage comprises a vertical hinge and a horizontal hinge to enable the drive mechanism to have a three-dimensional range of motion relative to the steering support.
35. (New) The skateboard of Claim 31, wherein the steering linkage pivots the drive mechanism in response to pivoting of the steering support that results from movement of the footboard during lateral pivoting of the skateboard.

36. (New) The skateboard of Claim 31, wherein the hinge joint comprises a mounting cup attached to the footboard and the drive mechanism.

37. (New) The skateboard of Claim 31, wherein the hinge joint is configured to allow the drive mechanism to pivot and slide laterally with respect to the footboard within the hinge joint in response to movement of the footboard during turning and driving of the skateboard.

38. (New) The skateboard of Claim 30, wherein the steering mechanism further comprises adjustment bolts, the adjustment bolts being configurable to increase or decrease the pivot of the drive mechanism in response to movement of the footboard during turning and driving of the skateboard.

39. (New) A user-propelled skateboard, comprising:
a single-piece footboard having a front and a rear;
front and rear axles;
two wheels mounted to each axle;
a drive mechanism coupled to both the footboard and the axles, the drive mechanism comprising a front transmission assembly associated with the front axle and a rear transmission assembly associated with the rear axle, each transmission assembly including:
a rack mounted to the footboard with a hinge joint,

a gear train coupled to the rack and an axle, the gear train being driven by linear displacement of the rack, and

a support that is connected to the footboard at a pivot point and connected to both transmission assemblies at a linkage;

wherein the footboard is pivotable about the pivot point so as to be alternately pivoted downward at the front and rear to displace the racks and thereby drive their gear trains to, in turn, drive the wheels such that such front and rear alternate pivoting drives the skateboard in a forward direction.

40. (New) The skateboard of Claim 39, further comprising a steering mechanism coupled to both the footboard and the drive mechanism, the steering mechanism including:

a steering support connected to the footboard;

a hinge joint connected to the footboard and to the drive mechanism; and

a steering linkage connected to the drive mechanism and the steering support;

wherein the application of a lateral force to the footboard pivots the steering support, which in turn pivots the steering linkage, which in turn pivots the wheels to turn the skateboard.

41. (New) The skateboard of Claim 39, wherein the transmission assembly further comprises a compression spring that provides an expansion force between the footboard and the transmission assembly so as to urge the footboard away from the transmission assembly.